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FinTech Transformation: How IT-enabled Innovations Shape the Financial Sector

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Abstract. FinTech, the phenomenon which spans over the areas of information technologies and financial innovation, is currently on the rise and is gaining more and more attention from practitioners, investors and researchers. FinTech is broadly discussed by the media, which constitutes its understanding and represents social opinion, however, this perception of FinTech should be supported by empirical evidences. Therefore, we examine five Swiss FinTech companies through the lens of the conceptual framework of understanding of FinTech and its dimensions and, by doing so, analyze the nature of FinTech innovations. Thereby, we extend the understanding of FinTech and provide a fruitful soil for further research in this area.

Keywords: FinTech, financial innovation, digital innovation, disruption, business model, blockchain.

1 Introduction

Classical banking has undergone considerable changes in the last decades and currently is facing the new era of digitalization. Digital technologies interfere almost each part of the banking business: from private banking to investment banking, from treasury to risk management. However, the digital technologies create value not only in the banking sector, but rather stretch along all the possible fields of financial sector. FinTech, which originates from the intersection of technology and finance, represents this intrusion of the digital technologies into the businesses enabling the latter to innovate. Although, the digital technology itself does not provide any advantage alone, but rather, combined with other available resources (e.g., organizational, environmental, strategical), it can create business value.

In this paper, based on the example of a few FinTech companies, we examine three steps of FinTech transformation and, by doing so, validate the conceptual framework of FinTech, proposed in [1]. This framework represents and synthesizes the social opinion on the understanding of FinTech phenomenon and, therefore, gives us the starting point to explore it empirically. In particular, we analyze five important and quite successful players on the Swiss Fintech market. First, we focus on the triggers which motivate FinTech innovation in financial services, namely the combination of a technology, an

organization, and investments. Second, we look closer at the transformation which this innovation performs. Third, we explore how such transformation affects FinTech services, products, business processes and business models. To do that, we analyze different kinds of sources (official websites of the companies, industrial reports and studies, newspaper articles, presentations and researchers' notes made during conferences for practitioners) and extract the information to each of the dimensions, discussed above.

The contribution of this paper is mainly targeted at practitioners in the field of digital and financial innovations, who would like to examine the empirical evidences of FinTech transformation on the example of the Swiss financial market. However, it also brings value to the researchers, who lack knowledge on the area of FinTech. To do that, we empirically validate the conceptual framework of understanding of FinTech, presented in [1], and discuss it from the perspective of practical applications. Here, we explore, if and how the building blocks, constituting the framework, are reflected in practice. Additionally, we argue if the conceptual framework can be used for identifying successful FinTech companies and projects. By doing so, we extend the scientific literature on FinTech and, therefore, contribute to innovation literature.

The remainder of the paper is organized as follows. In the related work we present the conceptual framework of FinTech from the perception of the popular media, used for the analysis, and discuss its dimensions (input, mechanisms and output) in more detail. The section "Snapshots of the Studied Companies" introduces the analyzed Swiss FinTech companies from 5 different areas of FinTech and syntheses the information in relation to the framework. Thereafter, we come to the findings of this study, where we discuss standing out features of the companies, their challenges and opportunities and role on the Swiss FinTech arena. This brings us to the conclusion of the paper, which admits the limitations of this study, but also highlights further research possibilities.

2 Related Work

The objective of this work is to validate the conceptual framework of understanding of FinTech on the practical examples of the five Swiss companies, operating in five different fields within FinTech. Therefore, in this chapter we will introduce the reader to the notion "FinTech", existing literature and the framework, which presents how FinTech is perceived by the popular media, and present the FinTech areas, where the studied Swiss companies come from.

Due to its novelty, the hyped phenomenon of FinTech itself is rather underrepresented in the Information Systems (IS) research. A keyword search for "fintech" in the AIS Electronic Library yields 11 hits (last accessed on 01.09.2016), which focus not on the phenomenon itself, but rather mention it in the context of "financial technology" once or twice (except for the paper published in 2004, where the name "Fintech" was related to the company, which published the cited report). Although, the scientific definition, which common to be used in IS research, is still

missing as well as the unified concept of FinTech phenomenon.

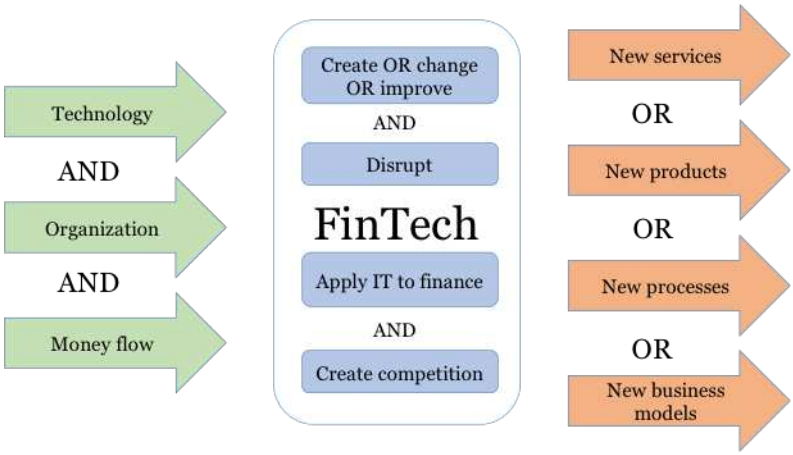

Fig. 1. Visual representation of the integral definition of FinTech [1]

In order to shed the light onto the phenomenon, in [1] the authors analyze more than 800 articles coming from the leading newspaper outlets, which are a representative of socially constructed opinion, and make the following conclusions. According to this study, FinTech is perceived as the process of transformation which lies on the intersection of financial and digital innovations and triggered by three elements, namely the underlying technology, organizational body and incoming investment. Such triggers, or enablers, are the mechanism for fostering the FinTech innovation. By the transformation four functions are meant: creation/change/improvement, disruption, application of IT to finance, creation of competition. They represent the actual processes which leads to the third dimension – the outcomes of such transformation. The result of this transformation produces new services/products/processes/business models. Figure 1 illustrates the conceptual framework. Further, we will introduce some of the concepts relating to the building blocks of the framework which may seem ambiguous and, therefore, mislead the reader. In our study we relate "create OR change OR improve" applied to the output dimension, namely services, products, processes and business models. We consider the disruption function of FinTech through the light of a disruptive technology, which is defined as "a technology that changes the bases of competition by changing the performance metrics along which firms compete" [2]. By the application of IT to finance we relate to the use of the "incoming" technologies (for example, blockchain) to the financial scenarios. Furthermore, the creation of competition is necessary for FinTech in a way, that innovating FinTech companies attract attention and trigger reaction among their competitors [3].

However, the proposed framework does not reflect the actual behavior of FinTech companies and thus needs to be validated in practice or even extended. The reason for that may come from the nature of the evolvement of the framework, as it mainly presents the understanding of the notion "FinTech" through the popular media and is

rather a reflection of the reflection of the actual phenomenon [1]. Therefore, it is important to deepen this research and examine examples of FinTech transformation in "the real world".

3 Snapshots of the Studied Companies

In this section we provide an overview of five Swiss FinTech companies and explore them through the lens of the conceptual framework, discussed above. As far as the framework suggests three dimensions of the FinTech transformation – namely the input, mechanisms and output – we look at the companies with the special focus on these three dimensions. The companies come from five different areas of FinTech in the order they appear in this section: peer-to-peer lending, payments, insurance, finance management and blockchain. Tables 1a and 1b synthesize the reflection of the conceptual framework in the studied companies and are followed by the extensive description.

Table 1a. Five Swiss FinTech companies through the prism of the conceptual framework (input)

	Input					
	Technology	Organization				Money flow
		Year	Location	Market	Type	
CreditGate24	- Crowdlending platform - Automated credit scoring system	2014	Zurich	B2B National	Independent company	Not available
Twint	Digital wallet in an app	2014	Bern	B2B & B2C National	Subsidiary	Funded by PostFinance
Knip	Digital insurance broker in an app	2013	Zurich	B2B & B2C International	Independent company	- Funded by venture capitalists - The most funded FinTech company in Switzerland
Contovista	Software for personal finance management	2013	Zurich	B2B National	Startup	Funded by large financial service and software providers
Ethereum	Blockchain platform	2015	Zug	Non-profit	Foundation	Funded through crowdfunding campaign

Table 1b. Five Swiss FinTech companies through the prism of the conceptual framework (mechanisms and output)

	Mechanisms				Output
	Creation / change / improvement	Disruption	Application of IT in Finance	Creation of Competition	
CreditGate24	- Low costs - Attractive interest rates - Flexible settlement process (online & quick)	Replacement of an intermediary	Lending business	In the top 11 Swiss FinTech platforms	Service Process
Twint	*For business customers:* - Price of transactions - Mobile marketing channel - Easy and low-cost setup *For private customers:* - Easy and quick cashless payments - Expenses management - Loyalty programs - No additional costs	Replacement of credit card payments	Payments	One of the most important players in Switzerland	Service
Knip	*For business customers:* - New sales channel *For private customers:* - Free service - Overview of insurances in one app - Free advisory service (per phone, email or online chat)	Replacement of insurance brokers	Insurance management	In the top 100 FinTech companies	Service
Contovista	Saving costs	Not disruptive	Personal finance management	In the top 100 Swiss FinTech startups	Product
Ethereum	- Secure and networked computing - Smart contracts can regulate any relationship which can be digitized	Replacement of an intermediary	Smart contracts can regulate any relationship which can be digitized, going beyond financial area	- The largest competitor of BitCoin - Does not compete but provides the technology which creates competition among its users	Business model

3.1 CreditGate24

CreditGate24, founded in 2014, connects borrowers with private and institutional investors through its highly automated direct-lending online platform [4]. The company operates on the national level.

Technology. The peer-to-peer lending platform allows to perform credit check based on classic credit assessment methods, big data analytics, the insurance and the solidarity arrangements [4].

Organization. CreditGate24 (Schweiz) AG is an independent Swiss company. The company is regulated by VQF (The Financial Services Standards Association), what indicates that the services are compliant with regulatory standards [4].

Money flow. Information on the investments, pouring into the company, is not available in the open sources, however, it is known that the company is not considered to be a startup, but works independently.

Creation / change / improvement. The company provides low-cost services and transparent fees, attractive interest rates (credit history and reliability of the borrower influences his/her rating; the better the rating is, the more attractive the interest rates are). Furthermore, the settlement process occurs online, flexibly and quickly, as both lenders and borrowers do not have to come to the branch offices, but communicate through the platform [5]. Therefore, we conclude that the company improve the costs of the service for the customers as well as it changes the process of handling the settlements.

Disruption. The disruptive function of the CreditGate24 innovation is presented by replacing the intermediary like a bank as a lender or investment advisor and bringing borrowers and investors together. Moreover, the platform allows to avoid going to the bank's office to arrange the credit settlement, but to perform all the activities online. However, Swiss banks are looking for space for cooperation. For example, Hypothekarbank Lenzburg, which before has not offered private loans, announced its cooperation with CreditGate24 in order to extend their offer [6].

Application of IT in finance. The company offers an online platform, which means there is no office, where the clients would come to, but on top of that the credit scoring system, integrated into the platform, is automated and uses methods from big data analytics. For example, it utilizes the data from the social networks to verify the information about borrowers and investors.

Creation of Competition. CreditGate24 is one of more than 40 peer-to-peer lending platforms in Switzerland and is considered to be one of Europe's top 11 the most

important platforms [7]. The management's ambitions are to become the largest lending platform in Switzerland [5], what means struggling with high competition on the market of crowdlending platforms. Among current competitors in Switzerland are Cashare – another crowdfunding platform – or Migros Bank as classic financial service provider with low interest rates on its loans [8].

Output. CreditGate24 is not a bank but a broker, therefore, the output of its business is providing the service which is used by both parties – investors and borrowers. Moreover, the company also changes the process of lending and investing money – switching from classical visit of an office in a bank to automatized online settlement. However, the provided platform (and the lending business itself) is strongly dependent on the matter of trust, this is where the banks bring still more advantage [8].

3.2 Twint

Twint AG, founded in 2014, is aimed at providing digital wallet service for use in Switzerland [9]. Twint targets both private and business customers on a national level.

Technology. For private clients Twint provides a mobile application, which allows its users to pay cashless in shops (both online and offline) and to transfer money between Twint-users [9]. For business clients Twint provides "Twint Beacon", which allows to settle the payment via Bluetooth (the beacon is a Bluetooth sender, which allows to pay cashless at the cashier; the beacon sends a number, which identifies the shop and the cashier, at which a client is standing [10]), and an application for business clients. Furthermore, business clients can start their marketing campaign, in which they can issue digital coupons and stamp cards [9].

Organization. Twint AG is a 100% subsidiary of PostFinance, a large Swiss financial service provider. The CEO of Twint is a member of PostFinance Executive Committee, whereas the chairman of Twint is the PostFinance CEO [10].

Money flow. Though the information on the investments is not available online, but as far as the company fully belongs to the PostFinance, we can assume, that the company was fully funded by its elder brother PostFinance, which in its turn is a subsidiary of the Swiss Post.

Creation / change / improvement. According to [10], the advantage which Twint brings is twofold: for business customers and for private app-users. For business customers the improvements are the following: the price of a transaction is lower for all sales channels (web-payments, cashier, app), mobile marketing channel at hand, easy and low-cost set-up. For private customers: easy and quick payments with the app (no credit card needed), expenses management in the app (overview of expenditures),

loyalty programs and offers from the partners (coupons, digital stamp cards), no additional costs.

Disruption. The disruptive character of the service, provided by Twint, is presented by replacing credit card payments with payments via smartphone, from the one hand. From the other hand, it allows business customers to process payments cheaper, faster and easier, but also to perform their marketing strategy using Twint.

Application of IT in finance. In case of Twint, the area of payments is exposed to the transformation, where the app for digital wallet is introduced. The payment can be settled through the "Twint Beacon" (which communicates with the cashier via Bluetooth), numeric token or QR-code.

Creation of Competition. Twint is one of the most important players in the area of digital payments in Switzerland (competing with Paymit, TawiPay, CashSentinel [11]). However, Twint claimed that the payment platform will be united with Paymit, integrating the best features from both into one solution [12]. On top of that, surprisingly, the PostFinance launches the competitor to their own product within the enterprise – an app which allows to pay using NFC-function [13].

Output. As an output, Twint creates a new service of payments for its private clients, but also opens a new channel for the marketing strategy for business clients.

3.3 Knip

Knip AG, founded in 2013, is a mobile insurance broker, which allows its users to compare tariffs and services from different companies [14]. Knip operates in Switzerland starting from 2013 and in Germany starting from 2015. Knip partners with insurance companies, whose offers are presented in the app.

Technology. Knip provides an app of the same name, which shows available insurance contracts, polices and offers. The technology is supported by human interaction in the way that insurance experts provides advice on security and tariffs online in chat or by phone [15]. The app is available for iOS- and Android users.

Organization. Knip AG currently has more than 100 employees, distributed in Europe (Switzerland, Germany and Serbia). The company is registered with IHK, the German Chamber of Industry & Commerce, and certified by TÜV, the German Technical Inspection Agency [16].

Money flow. As a startup, Knip was funded by venture capitalists from the U.S., Switzerland, Netherlands, Germany. By the end of the year 2015, it was announced that the company got the largest amount of investments on the FinTech arena in Switzerland [17].

Creation / change / improvement. The client gets an overview of his/her insurances, on top of that the client receives an advisory service for free, provided by "Knippers" through any channel (phone, email, online chat) [18]. Therefore, the service for the end customer is for free. Business customers (insurance companies, partnering with Knip) get one more sales channel in their turn. Therefore, the company creates the new service of accessing his/her insurance data and changes the channel for accessing this data.

Disruption. Though Knip is very successful among its competitors, its disruptive effect is doubtful, as the app is new, but its business model is not. The questions of transparency of the service and data security still remain open [19]. However, we should admit that the possibility to replace insurance brokers with an app exists.

Application of IT in finance. Although we consider Knip to belong to FinTech companies, it becomes more obvious that insurance startups are getting their own area of "tech" – InsurTech [20]. In case of Knip, the created app is applied to the area of insurance management.

Creation of Competition. In 2015 Knip got the 29th place in the FinTech 100 rating, created by KPMG and H2 Ventures, presenting the most successful and innovative startups in the area of FinTech. Concerning the local competition among startups, Knip remains a leader on the Swiss market in insurance management services, however, more and more startups appear trying to beat it (see Esurance, for example).

Output. Knip creates a service, which allows for cheaper (free, in fact) and easier (available through the app on a smartphone) service of insurance management.

3.4 Contovista

Contovista, founded in 2013, is a startup which created a software for personal finance management, which can be integrated into online banking [21]. The company targets B2B national market. The proposed solution has become known through the partnership with Zurcher Kantonalbank, the largest cantonal bank and the fourth largest bank in Switzerland [22].

Technology. The software, created by Contovista, is a personal finance manager, which automatically analyses and categorizes the expenses and income of a user. The software can be integrated into the solutions for online banking.

Organization. The company has 15 employees [23]. In the early 2016 the Aduno Group, Swiss expert in cashless payments, acquired 14 percent holding in Contovista and represented in Board of Directors [24].

Money flow. Contovista attracted considerable investments from the Aduno Group, large financial service provider [24], and the largest Swiss banking software providers, Avaloq and Finnova [21], which helped the company to boost.

Creation / change / improvement. Though the solution, created by Contovista, is not revolutionary, the benefit it brings to the customers is saving costs on in-house programming of the software [21]. Therefore, we conclude Contovista's solution as the creation of a new product.

Disruption. Although the software, proposed by Contovista, is not disruptive itself, the practice shows that only a few banks (UBS and PostFinance) developed such solution for their online banking service [21]. In this sense, we can conclude, that Contovista rather fills the gap, than disrupt the existing solutions.

Application of IT in finance. The application of IT in finance in case of Contovista is straight-forward: the provided software (IT) operates in the area of personal finance management and is implemented in the banking sector, which has direct relation to finance.

Creation of Competition. Contovista successfully competes among other FinTech startups: It entered 100 best Swiss FinTech startups, taking the 26th place [25]. However, the market of direct competitors with similar solutions is not diverse. The main competitor on the Swiss arena is Qontis, which also targets private clients [21].

Output. Contovista creates a product, the personal finance management software, which can be integrated in online banking service. This product is solely targeted on business customers, primarily banks.

3.5 Ethereum

Ethereum is a decentralized open-source platform that runs smart contracts, automated applications that run exactly as programmed on a custom built blockchain [26]. The Ethereum blockchain was launched in July 2015.

Technology. Smart contracts are programs that store their state on the public blockchain. These smart contracts (basically, lines of code) are written in Solidity, JavaScript-like programming language for developing smart contracts, which is compiled to bytecode, executable on Ethereum Virtual Machine [27]. Ether is a kind of fuel for operating the network, which clients pay to the machines to execute the transactions [28].

Organization. The platform is created by the non-profit Swiss-based Ethereum Foundation, whose mission is "to promote and support research, development and education to bring decentralized protocols and tools to the world that empower developers to produce next generation decentralized applications (dapps), and together build a more globally accessible, more free and more trustworthy Internet" [29].

Money flow. The Ethereum Foundation got funded (15 Million Swiss Francs) through the crowdfunding campaign in 2014 [29, 30] and became the second most successful crowdfunding project [31].

Creation / change / improvement. Ethereum enables secure and networked computing. It means there is no central authority, the network of computers does not require any trust from its participants, as the system regulates itself [30]. If to speak about applications of Ethereum in the financial area, Ethereum apps provide the possibility to execute financial transactions faster than in existing systems. Furthermore, smart contracts are well-suited for those kinds of transactions that involve interactions of counterparties (which in their turn require higher level of trust and lower risks, e.g., loan/debt payments). It means that the inter-banking activities can be improved the most [30], as the ones which require high level of trust by their nature and, therefore, the trustless architecture of the blockchain technology can be advantageous.

Disruption. Ethereum itself is not disruptive, however, the technology and the idea which run behind smart contracts, built on Ethereum, are. Money transfer without a bank, which coordinates and reduces risks of fraud; or bets without a betting shop – the removing of a central authority becomes possible with Ethereum [30].

Application of IT in finance. The applications of Ethereum platform go far beyond financial area, even though it currently remains the most attractive one (for example, crowdfunding campaigns run on Ethereum) [32]. Smart contracts may be used whenever their business logic allows to be transferred into code (existing examples include decentralized music streaming or observation of the voting [32]).

Creation of Competition. Ethereum is recognized to be the largest competitor with BitCoin, cryptocurrency running on blockchain. However, Ethereum is rather a creator of competition, than a competitor by itself. More and more startups are born on the idea of Ethereum and its smart contracts, more and more of existing ones try to utilize smart contracts for their business needs.

Output. Ethereum is not a service, but rather an enabler of a new business model and a process. There are startups utilizing the platform for creating new services and products, or using the technology in the existing businesses [33]. However, also IT giants IBM (bringing blockchain to Internet of Things) and Microsoft (with blockchain-based cloud service) approached Ethereum playing around with the technology and trying to integrate it in their businesses [30].

4 Findings

The purpose of this study is to examine the conceptual framework of the perception of FinTech, proposed by [1], from an empirical perspective. In this section we discuss obtained results, make conclusions and highlight the special outstanding features of the studied companies, observed in the data, in relation to the building blocks of the framework (input, mechanisms and output).

In this paper we studied five different, but quite successful FinTech players in Switzerland. The Swiss start-up and entrepreneurial scene is currently attracting more attention. The potential for entrepreneurship in the area of FinTech in Switzerland is high thanks to the considerable financial knowledge and experiences, however, there are some challenges to overcome at the regulatory and institutional levels. Furthermore, from the perspective of the investment flow Switzerland is often considered to be an attractive place, however, the analysis shows that the funding rather comes from the larger players on the arena than from external sources (like a crowdfunding projects). The considerable money flow from banks or large IT companies may be explained by their intention to cooperate with smaller FinTech startups, but not to compete with them and lose at the end of the game.

Considering the output dimension of FinTech, the tendency is to present oneself as providing services or business models. This goes in line with the whole turn of the economy from product-centric model to the service-logic. In our opinion, FinTech is a child of this re-orientation: for companies, which started their existence in the product-oriented time (banks still define, e.g., investment portfolios and their management as a product, which is sold by the frontline employees) such as PostFinance, doing service innovation can be a chance to stabilize their position in the new, service-oriented market.

Considering the mechanisms, involved in generation of FinTech innovation: we observe that the business offering, described in "change/creation/improvement" can be only seldom defined by a single item. On the contrary, each startup has a multifold contribution to the market, where some changes accompany creations (i.e., new offerings). While this is in line with the original formulation "Change OR Creation OR Improvement" (assuming that OR is an inclusive or), we see this field as extremely broad. Since the original framework was based on newspapers' articles, it shows how broadly the term was defined therein. However, here we can observe common patterns in cost reduction, increase of transparency, easiness and quickness of a service/process.

Considering the building block of the "technology" in the input dimension, we wish the original framework would make concrete suggestions on what technologies are involved in FinTech. What we observe in our analysis, is a tendency towards mobile devices on the one side (primarily for the consumer in a B2C scenario) and extensive platforms (including bitcoin for B2B scenario). This tendency opens up the questions, if this is really the direction FinTech will take in future or this is only so due to the focus of the studied companies on those two dynamically changing areas (which, of course, get reflected in the framework).

In general, we observe that the framework, proposed in [1], can be used to identify

primary differences between startup companies in terms of organizational and business inputs; we, however, wish more concrete and precise definitions in the topic of technology and change/creation/improvement. However, these drawbacks reflect clearly the origin of the framework: while popular media is strong at identifying and describing business issues, and by discussing organizational topics, articles presented in there provide little insights on technologies used. Therefore, this dimension remains very general in the framework, proposed by [1], and clearly orients itself at presenting almost everything as "change OR creation OR improvement" as the newspapers thrive for sensational and attracting attention publications.

This study was a try to apply the proposed framework for extending the notion of FinTech by analyzing particular players – it was a successful try. We learned more about the service-oriented nature of FinTech and about the fact that, at least in Switzerland, successful innovations in this regard are driven by larger players who do not want to miss the opportunity to innovate and turn towards new services. However, we claim that a predefined classification schema in the technology as well as some help to better describe the creation or change or improvement would make the framework even more applicable and popularize it within the research field. This sets the frame for our future research.

5 Conclusion and outlook on future research

This study was motivated by the need to improve the understanding of the phenomenon of FinTech, hyped by the media but quite ambiguous in IS research. Although, the first step forward establishing a common understanding has been made by the authors of [1], who analyzed FinTech seen from the perspective of the popular media and created the conceptual framework of its understanding, the question of its practical validity still remained open. Therefore, this study follows descriptive approach and addresses the topic of FinTech from different perspective with the purpose to discuss the evidences of FinTech transformation in five Swiss FinTech companies. These FinTech companies operate in several areas: crowdlending, digital payments, insurance, personal finance management and blockchain.

This work contributes to existing research and practice in several ways. It presents and discusses the evidences of FinTech transformation on the example five studied Swiss companies and, therefore, tests the conceptual framework, used as the theoretical background of the study. Furthermore, it extends the existing literature on FinTech and, therefore, contributes to financial and digital innovation literature.

Several limitations and opportunities for future research should be admitted. We will present limitations first, which go along with ideas for future research.

First, only a small number of Swiss FinTech companies was studied. Observing a larger variety of FinTech companies, operating in different areas, would be advantageous, as it could be used to make the framework a powerful tool to identify and cluster FinTech companies and innovations. The companies can be studied with the focus on different aspects, e.g. organizational structure and culture, business model,

market orientation, willingness and readiness to cooperate, etc. Furthermore, by increasing the number of the companies, included in the study, one can examine the tendencies in FinTech over time.

Second, we should also admit that the study was conducted in order to examine Swiss FinTech arena, however, the results may look differently in other European countries and the ones in the Asian part of the world. The reason for that can be different working culture, regulatory system, economic conditions and a special place, which Switzerland takes on the world financial arena. Therefore, we encourage researchers, who are interested in the topic, to extend this research with a similar one, but addressing other important FinTech locations, and therefore providing a richer description of FinTech transformations happening. This will allow for more generalizability of the results to FinTech as an international phenomenon.

Third, in this research we have collected the information on the companies which is available in open access. However, we would recommend to advance this research by interviewing FinTech practitioners and presenting the opinions from "the wild". This could bring new opportunities and unveil unknown problems, important for FinTech insiders but invisible for the press, industrial observers and researchers.

Having these opportunities in mind, we are optimistic about future research directions and would like to encourage IS researchers to contribute more to the scientific literature on FinTech, which is currently on its rise but rather still underrepresented in research.

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